

## Abstract

An integrated wireless and wired hands-free device for a mobile phone has a blue-tooth wireless transceiving module. When the blue-tooth wireless transceiving module receives an incoming signal, it sends an activation control  
5 signal to an audio mix switch, which switches on a voice transmission channel to be used by the blue-tooth wireless transceiving module. The incoming signal is transmitted through the audio mix switch and a control device and finally output by a loudspeaker to be heard by a user, who can then achieve  
intercommunication via a microphone. The intercom voice signal is transmitted  
10 through the control device, the audio mix switch and the blue-tooth transceiving module and finally sent out by the blue-tooth transceiving module. The audio mix switch is also connected to a wired transmission device providing connection with a mobile phone lacking the blue-tooth wireless  
transmission function to accomplish reception of an incoming signal and  
15 intercommunication.